

**WHAT IS CLAIMED IS:**

1. A carbon black having an I<sub>2</sub> No. of from about 50 to about 112 mg/g, primary particle size of not greater than 25 nm, and at least one of the following properties:
  - 5        a) an ash content of less than about 1%;
  - b) a total sulfur content of less than about 2%;
  - c) a toluene extractable level of less than about 1%, or
  - d) a 325 mesh residue of about 200 ppm or less.
2. The carbon black of claim 1 wherein the I<sub>2</sub> No. is 73-104 mg/g.
- 10        3. The carbon black of claim 2 wherein the I<sub>2</sub> No. is 75-99 mg/g.
4. A polymer composition comprising at least one polymer and the carbon black of claim 1.
  5.        The polymer composition of claim 4 wherein the I<sub>2</sub> No. of the carbon black is 73-104 mg/g.
  - 15        6.        The polymer composition of claim 4 wherein the I<sub>2</sub> No. of the carbon black is 75-99 mg/g.
  7.        The polymer composition of claim 4 wherein the polymer composition comprises 0.5 to 300 parts by weight carbon black per 100 parts by weight of polymer.
  - 20        8.        The polymer composition of claim 4 wherein the polymer composition comprises 0.5 to 100 parts by weight carbon black per 100 parts by weight of polymer.
  9.        The polymer composition of claim 4 wherein the polymer composition comprises 0.5 to 80 parts by weight carbon black per 100 parts by weight of polymer.
  10.      The polymer composition of claim 4 wherein the polymer is a polyethylene or copolymers thereof.

11. The carbon black of claim 1 wherein the I<sub>2</sub> No. is approximately 104 mg/g and the primary particle size is approximately 16 nm.

12. The carbon black of claim 1 wherein the I<sub>2</sub> No. is approximately 89 mg/g and the primary particle size is approximately 18 nm.

5 13. The carbon black of claim 1 wherein the I<sub>2</sub> No. is approximately 91 mg/g and the primary particle size is approximately 18 nm.

14. The carbon black of claim 1 wherein the I<sub>2</sub> No. is approximately 99 mg/g and the primary particle size is approximately 17 nm.

15. The carbon black of claim 1 wherein the I<sub>2</sub> No. is approximately 86 mg/g  
10 and the primary particle size is approximately 19 nm.

16. The carbon black of claim 1 wherein the I<sub>2</sub> No. is approximately 96 mg/g and the primary particle size is approximately 17 nm.

17. The carbon black of claim 1 wherein the I<sub>2</sub> No. is approximately 85 mg/g and the primary particle size is approximately 17 nm.

15 18. The carbon black of claim 1 wherein the I<sub>2</sub> No. is approximately 73 mg/g and the primary particle size is approximately 18 nm.

19. The carbon black of claim 1 wherein the I<sub>2</sub> No. is approximately 86 mg/g and the primary particle size is approximately 19.5 nm.

20. The carbon black of claim 1 wherein the I<sub>2</sub> No. is approximately 90 mg/g  
20 and the primary particle size is approximately 19 nm.

21. The carbon black of claim 1 wherein the I<sub>2</sub> No. is approximately 89 mg/g and the primary particle size is approximately 17 nm.

22. The carbon black of claim 1, wherein the carbon black has at least two of the additional properties.

23. The carbon black of claim 1, wherein said carbon black has all of the additional properties.

24. The carbon black of claim 1, wherein said total sulfur content is less than about 0.1%.

5 25. The carbon black of claim 1, wherein said toluene extractable level is less than about 0.1%.

26. The polymer composition of claim 4, wherein said polymer is a polyolefin.

27. The polymer composition of claim 4, wherein said polymer comprises LLDPE, HDPE, MDPE, or combinations thereof.

10 28. The polymer composition of claim 4, wherein said polymer comprises a polystyrene, polycarbonate, nylon, or combinations thereof or copolymers thereof.

29. An article comprising the polymer composition of claim 4.

30. The article of claim 29, wherein said article is a pipe, connector, cable jacketing, membrane, molding, or components thereof.

15 31. The article of claim 29, wherein said article is a pressure pipe.

32. The article of claim 29, wherein said pressure pipe is a UV pressure pipe.

33. The article of claim 29, wherein said article is a potable water or gas pipe.

34. The carbon black of claim 1, further comprising a CDBP of less than or equal to 102 cc/100 g.

20 35. The carbon black of claim 34 wherein the CDBP is 70-100 cc/100 g.

36. The carbon black of claim 34 wherein the CDBP is 80-95 cc/100 g.

37. The carbon black of claim 1, having an I<sub>2</sub> No. of 50-85 mg/g; a primary particle size of less than or equal to 25 nm; and a CDBP of less than or equal to 96 cc/100 g.

38. The carbon black of claim 37 wherein the I<sub>2</sub> No. is 55-80 mg/g.
39. The carbon black of claim 37 wherein the primary particle size is from greater than 20 nm to 25 nm.
40. The carbon black of claim 37 wherein the CDBP is 50-96 cc/100 g.
- 5 41. The carbon black of claim 32 wherein the I<sub>2</sub> No. is 60-78 mg/g.